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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,094	08/22/2003	Richard L. Dubay	D398.12-0001	8387
164	7590	08/22/2007		
KINNEY & LANGE, P.A. THE KINNEY & LANGE BUILDING 312 SOUTH THIRD STREET MINNEAPOLIS, MN 55415-1002			EXAMINER JOHNSON, MATTHEW A	
			ART UNIT 3682	PAPER NUMBER
			MAIL DATE 08/22/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/646,094	<b>Applicant(s)</b> DUBAY, RICHARD L.	
	<b>Examiner</b> Matthew Johnson	<b>Art Unit</b> 3682	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1, 4, 5, 7, 9, 13, 14, 16-18 and 20-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9, 13, 14 and 25 is/are allowed.
- 6) ☒ Claim(s) 1, 4, 7, 16-18, 20-24 and 26 is/are rejected.
- 7) ☒ Claim(s) 5, 27 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 June 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Prosecution Application***

The request filed on July 7, 2007 for Continued Examination (RCE) is accepted and a RCE has been established. An action on the RCE follows.

### ***Claim Objections***

1. Claim 4 is objected to because of the following informalities: Claim 4 has been amended to depend from Claim 4. A dependent claim cannot depend from itself, thus the dependency of Claim 4 is improper. (Note: In page 5 of the remarks dated 6/7/2007, Applicant stated that claim 4 has been amended to depend from claim 1. Accordingly the examiner will examine claim 4 based on this statement)

Appropriate correction is required.

2. Claim 1 is objected to because of the following informalities: use of the term "subsuming" does not appear to be appropriate to describe the arrangement of the plane. The examiner requests that the Applicant clarify the intended definition.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 4, 5, 7, 21, 22, 23, 24 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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5. Claim 1 recites the limitation "the plane subsuming the rails" in line 8. There is insufficient antecedent basis for this limitation in the claim. There has been no positive recitation of a "plane" or a "rail" in the claim.
6. Claim 1 recites the limitation "the movable die block" in line 13. There is insufficient antecedent basis for this limitation in the claim. (Note: the limitation "movable" has been deleted in amended claim 1)
7. Claim 22 recites the limitation "wherein the slide includes a removable faceplate". Claim 1 has previously recited "a faceplate" in line 6 making it unclear if the applicant is referring to the same faceplate, or claiming an additional "removable faceplate".
8. Claim 23 recites the limitation "the stationary die block" in line 2. There is insufficient antecedent basis for this limitation in the claim. (Note: the limitation "stationary" has been deleted in amended claim 1)

The remaining claims depend off of the above rejected claims and are therefore also indefinite.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 4, 7 and 21-24, as best understood, are rejected under 35 U.S.C. 103(a) as being anticipated by Foltuz et al. (USP-5,595,771) in view of Kordovski et al. (USP-5,111,873).

Re clm 1: Foltuz discloses a slide assembly (39) for use with a molding or casting system comprising a(n):

- Base (53a-d and plate on top of 40, see Fig. 3) removably mounted (C5 L24-29) to a first die block half (14)
- Slide (52a-d) engagable with the base such that the slide is movable relative to the base in a first direction and a second direction, wherein the first direction is opposite of the second direction (C4 L10-15), the slide comprising: a faceplate (55a-d) having a core pattern (see Figs. 5 & 6) attached to the slide (C5 L53-56 & C6 L7-10); and a slot (formed by holes 44a-d and openings 51a-d, C5L41-43 & C6 L48-50) having a first slide flat surface (A, see attached figure below) and extending centrally through the slide at angle oblique to the plane subsuming the rails (Fig. 3 rails on 53A);
- Cam lever (30a-d) mountable to a second die block half (12) and removably insertable into the slide during a molding or casting cycle (C6 L51-54), the cam lever comprising a head (Fig. 2 mounted in plate 22) and a tail (Fig. 2 protrusion from the head) having a first cam flat surface (B, see attached figure below) extending from the head at the oblique angle for insertion into the slot; wherein the cam lever is adapted to move the

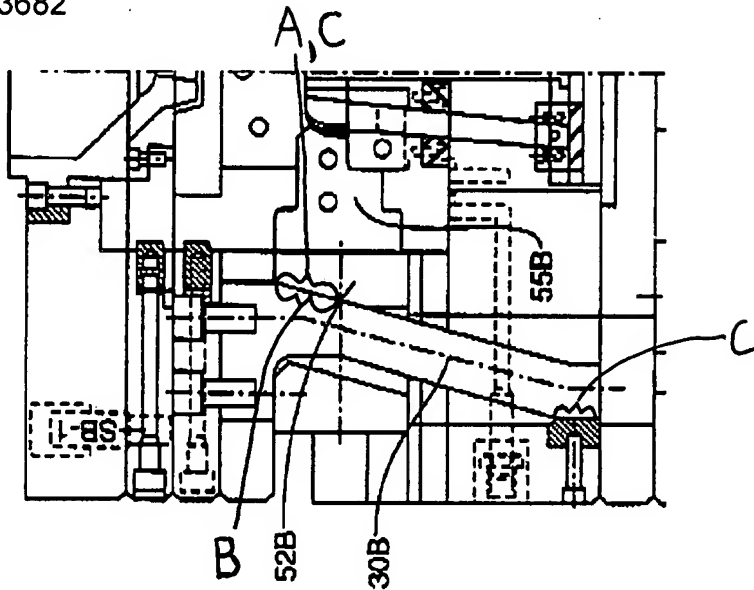
slide relative to the base through cam action (C6 L 22-28 & L47-54) and wherein the first cam flat surface of the tail flushly abuts the first slide flat surface of the slot to retain position of the slide relative to the first die block half during an injection phase of the molding or casting cycle (Fig. 5)

While Foltuz does indeed disclose that the slide may be actuated by a hydraulic cylinder that would inherently include a coupler mounted to the slide (C6 L60-64), he does not explicitly disclose a coupler that is positioned opposite the faceplate.

Kordovski teaches a coupler (70,82; C3 L1-4) for connecting the slide (66,68) to a hydraulic actuation mechanism (86), wherein the coupler is positioned opposite the faceplate (72; C2 L61-64) for the purpose of actuating the slide assembly and the core back and forth during the casting process.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the device of Foltuz, to include a coupler positioned opposite the faceplate, as taught by Kordovski for the purpose of actuating the slide assembly and the core back and forth during the casting cycle.

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Re clm 4: As described above, Foltuz discloses a cam lever that comprises an oblique angle between the head and the tail. Additionally, it appears that the oblique angle is greater than 130 degrees and less than 160 degrees as referenced from a front surface of the head (Fig.5), however he does not explicitly disclose an angle greater than 130 degrees and less than 160 degrees.

Since the applicant is silent with respect to any criticality or unexpected results resulting from having an oblique angle between the head and the tail of greater than 130 degrees and less than 160 degrees, such an arrangement would have been an obvious matter of design choice to one of ordinary skill in the art, as it appears that the device of Foltuz would function equally well at any angle within the specified range.

Re clm 7: Foltuz discloses that the cam lever (30a-d) extends through the base when the cam lever is inserted through the slide (Fig. 5).

Re clm 21: Foltuz discloses that the tail of the cam lever comprises a quadrangular cross section (Fig. 2)

Re clm 22: Foltuz discloses the slide (52a-d) includes a removable faceplate (55a-d) adapted for receiving various mold patterns for insertion into the core (C3 L44-47 & C5 L44-51).

Re clm 23: Fultoz disclose that the first flat surface of the tail leverages the faceplate against the first die block half to immobilize the slide during the molding or casting process (Fig. 5).

Re clm 24: As described above, Foltuz discloses a cam lever that comprises an oblique angle between the head and the tail. Additionally, it appears that the oblique angle is approximately 155 degrees (Fig.5), however he does not explicitly disclose an angle greater of approximately 155 degrees.

Since the applicant is silent with respect to any criticality or unexpected results resulting from having an oblique angle between the head and the tail of approximately 155 degrees, such an arrangement would have been an obvious matter of design choice to one of ordinary skill in the art, as it appears that the device of Foltuz would function equally well at the specified angle.

11. Claims 16, 18, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foltuz et al. (USP-5,595,771) in view of Yamada (USP-6,240,796).

Re clm 16: Foltuz discloses a slide assembly (39) for use with a molding or casting system comprising a(n):



- Base (53a-d and plate on top of 40, see Fig. 3) adapted to be mounted (C5 L24-29) to a first die block half (14) and having first and second tracks (Fig. 3, 53a-d) comprising grooves in the base
- Slide (52a-d) having first and second rails (Fig.3) engagable with the first and second tracks of the base such that the slide is entrained within the base and movable relative to the base (C4 L10-15) to insert and remove a core pin (55a-d; Note: 55a-d can take on a variety of shapes, C3 L44-47 & C5 L44-51) from a core (50) within the molding or casting system
- Cam lever (30a-d) adapted to be connected to a second die block half (12) and removably insertable into the slide for moving the slide relative to the base through cam action (C6 L 22-28 & L47-54) and having a flat surface (C, see attached figure above) for immobilizing the slide during a molding or casting cycle;

Foltuz does not disclose a circuit coupled to either the first or second track of the base and adapted to provide signals to limit the movement of the slide relative to the base.

Yamada teaches a circuit (74, 76-79, 80, 81) coupled to either the first or second track (8) of the base (2) and adapted to provide signals to limit the movement of the slide (3) for the purpose of detecting the position of the slider and transmitting a signal to a control the movement of the slide (C10 L43-64).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the device of Foltuz to include a circuit coupled to

either the first or second track of the base and adapted to provide signals to limit the movement of the slide relative to the base, as taught by Yamada, for the purpose of detecting the position of the slider and transmitting a signal to a control the movement of the slide (C10 L43-64).

Re clm 18: Foltuz discloses that the cam lever (30a-d) extends through the base when the cam lever is inserted through the slide (Fig. 5).

Re clm 20: As described above, Foltuz discloses a cam lever that comprises an oblique angle between the head and the tail. Additionally, it appears that the oblique angle is greater than 130 degrees and less than 160 degrees as referenced from a front surface of the head (Fig.5), however he does not explicitly disclose an angle greater than 130 degrees and less than 160 degrees.

Since the applicant is silent with respect to any criticality or unexpected results resulting from having an oblique angle between the head and the tail of greater than 130 degrees and less than 160 degrees, such an arrangement would have been an obvious matter of design choice to one of ordinary skill in the art, as it appears that the device of Foltuz would function equally well at any angle within the specified range.

Re clm 26: Foltuz discloses that the flat surface of the cam lever retains the slide by pushing flush against the slide to pin the slide against the first die block half (Fig. 5)

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Foltuz et al. (USP-5,595,771) in view of Yamada (USP-6,240,796) further in view of Kordovski et al. (USP-5,111,873).

Foltuz in view of Yamada disclose all of the claim limitations as described above.

While Foltuz does indeed disclose that the slide may be actuated by a hydraulic cylinder that would inherently include a coupler mounted to the slide (C6 L60-64), he does not explicitly disclose a coupler that is positioned opposite the faceplate.

Kordovski teaches a coupler (70,82; C3 L1-4) for connecting the slide (66,68) to a hydraulic actuation mechanism (86), wherein the coupler is positioned opposite the faceplate (72; C2 L61-64) for the purpose of actuating the slide assembly and the core back and forth during the casting process.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have modified the device of Foltuz, to include a coupler positioned opposite the faceplate, as taught by Kordovski for the purpose of actuating the slide assembly and the core back and forth during the casting cycle.

***Allowable Subject Matter***

13. Claims 9, 13, 14 and 25 are allowed.

14. Claims 5 and 27 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

**Conclusion**


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew Johnson whose telephone number is 571-272-7944. The examiner can normally be reached on Monday - Friday 8:30a.m. - 5:00p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Ridley can be reached on 571-272-6917. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJ

MJ 8/16/2007



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